GROUP EFFECTIVENESS RESEARCH LABORATORY

DEPARTMENT OF PSYCHOLOGY

UNIVERSITY OF ILLINOIS

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Communication, Cooperation, and Negotiation in Culturally Heterogeneous Groups

Report of Progress under Contract ARPA No. 454

Project Code 2870, Nonr 1834(36)

with the

Advanced Research Projects Agency



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Abstract

This project seeks to identify culturally critical concepts and behaviors which are likely to affect interpersonal relations and task performance in culturally heterogeneous groups. Work under this project is now in its fourth year.

Subproject I (Triandis) developed several techniques for identifying cultural differences in interpersonal behaviors. These inches the Role Differential and the Behavioral Differential by T-landis, and Semantic Feature halysis by Osgood. These three techniques measure the ways individuals from different cultures perceive and interpret interpersonal behaviors. In addition, the Antecedent-Consequent Meaning technique obtains cultural differences in cognition, relevant to the perception of key concepts. Information obtained by means of these techniques is now being incorporated into culture training programs.

Subproject II, originally directed by L. M. Stolurow (on leave from Illinois since September 1966) is now jointly supervised by Triandis and Fiedler. This Subproject has developed a self-instructional training system, called the Culture Assimilator. In addition to the original Culture Assimilator constructed by Stolurow and his associates, we now have Culture Assimilator programs for Iran (Che. e.c. and Chemers); Thailand (Foa and Mitchell); and Honduras (Symonds, O'Brien, Vidmar, and Hornik).

A Culture Assimilator was also prepared for a specific study with Indian subjects (Nayar and Touzard), and a shortened experimental version is now being prepared for a study to be conducted in Greece.

Subproject III (Fiedler) has continued work on a theory of leadership effectiveness (The Contingency Model) which now enables us to predict
group and organizational performance with relatively high contistency.

Particular attention during the past year has been focused on extending
the Model to groups with culturally heterogeneous membership and to groups
and organizations with coacting and counteracting (negotiation and bargaining) tasks. A number of methodological studies have been conducted to
identify some of the task-related factors which influence performance. A
large field study was conducted in Honduras with teen-aged volunteer public
health teams; some of the data of this study are being analyzed with ARPA
funds. The data collection in Iran was successfully completed this summer.
We now have questionnaire responses for a total of 57 teams and data
processing is in progress.

Professors Fiedler and Triandis presented reports of our research at the NATO conference on "Manpower Research and the Defence Contex,"

London, held August 14 to August 18, 1967. One session was devoted to our research program. It was chaired by Dr. Luigi Potrullo, Director of the Psychological Sciences Division of the Office of Naval Research. Professor Pieter Drenth of the Free University of Amsterdam, and Dr. Urgiste Bouvier, the Director of the Center for Social Studies of the Belgian Ministry of Defense served as discussants.

Professor Triandis will be one of the main lecturers at a NATOsupported Advanced Study Institute on "Methods to Study National Character,"
to be held in Athens, Greece, in July 1968. The work of Subproject I will
be the focus of the conference, which will be attended by about thirty NATOPsychologists.

One of our major problems at this time is the need for field testing the Culture Assimilator programs under various conditions. We have been materially aided in our search by Mr. David Cooper who was temporarily attached to Dr. Wilson's office as a management interne. Mr. Cooper contacted a large number of government officials within the Department of Defense As well as AID, the Foreign Service Institute, Peace Corps, etc. Thinks to his efforts, a conference with AID and FSI of the State Department has now been arranged for November 17. We have also had a very complimentary letter about our project from Major General Richard Stilwell, the former Commanding General of U.S. troops in Thailand. General Stilwell took it upon himself to write to his successor, General H. D. McCowan, to suggest that MACTHAI cooperate with us in making appropriate field tests of the Thai Assimilator. We have already been contacted by General McCowan's Chief of Staff and Fiedler is planning to go to Thailand this January to make specific arrangements for a field test in cooperation with the Bungkok ARPA unit. We are also pursuing the possibility of training additional young men and women from Lewis and Clark College, Portland, Oregon, who are planning to work on a volunteer basis in Iran.

SUBPROJECT I

- 1. The major focus of Subproject I during the past several months has been on the integration of findings from Osgood's and Triandis' studies of culture differences. A major effort to accomplish this integration is now under way with the Greek data. A draft of an essay on Greek national character by Triandis and Vassiliou is now available and has also been made the basis for a Greek Culture Assimilator.
- 2. Four studies, under the general direction of Triandis, are exploring the cognitive reorganization associated with Culture Assimilator training.
 - (a) Summers is directing a study of changes in role perception in which Culture Assimilators have been used with Americans going to Honduras to undertake a medical assistance program.
 - (b) Vassiliou is directing a study in which American military, stationed in Greece, are exposed to a lengthy essay on Greek national character.
 - (c) Chemers, Mitchell, and Symonds are working on a study in which American students are exposed to either a Culture Assimilator program about Thailand or an essay about Thailand. The Greek Culture Assimilator was developed from the Greek essay; the Thai essay was developed from the Thai Culture Assimilator.
 - (d) Mitchell is planning a thesis involving various versions of the Thai Assimilator.

The basic design of all these studies is as follows:

| At | Experimental Groups | Control Group 1 | Control Group 2 | Control Group 3 |
|--------|---------------------|------------------------|---------------------|---------------------|
| Time l | Pre-test | Pre-test | • | - |
| Time 2 | Culture training | Irrelevent training | Culture training | Irrelevant training |
| Time 3 | Post-test | Post-test | Post-test | Post-test |

This design allows for the separate assessment of the "cultural sensitization" produced by the pre-test, the effect of the culture training, and the interaction between culture-sensitization and culture training. The pre- and post-tests consist of a variety of semantic, behavioral, and role differentials, as well as other cognitive tasks. In some designs, the Ss respond not only the way "Americans would respond" but also the way "Greeks (or Hondurans) would respond." Thus, we are able to assess the effect of the accuracy of social perception upon culture training. In one of our studies in this series, instead of irrelevant training we have essays carefully matched to take the same amount of time to study as the Culture Assimilator training.

From these studies we hope to be able to determine the answers to questions such as the following:

(a) What kinds of cognitive changes occur in Gulture Assimilator training?

- (b) What particular aspects of cognition about the other culture change most, and what aspects change least?
- (c) In what ways is Culture Assimilator training different from reading an essay on the same topic?
- (c) Does being sensitized to "cultural issues," as stimulated by responding to the pre-test materials, interact in any way with Culture Assimilator training?
- 3. The Summers, Stewart, and Oncken study of foreign policy-making in American and Arab dysds is now being prepared in Technical Report form.
- 4. The Antecedent-Consequent study of cultural influences on cognition has now been analyzed. All co-investigators of this project met with Triandis this summer and reviewed their findings. A draft of a Technical Report reporting the results of this study is planned for the coming quarter.
- 5. Oncken is writing his Master's thesis in which a set of 50 interpersonal behaviors (e.g., to love) and 50 dyadic roles (e.g., father-son) were rated on four factor-analytically derived culture-common dimensions of role and behavior perception; namely affect, status, intimacy-formality, and hostility. Correlations between the median ratings of the behavior descriptive items on the four dimensions indicated a two-dimensional "behavior space" consisting of an affect dimension, characterized by high affect and giving status on one and versus hostility on the other end, and a second dimension consisting of intimacy versus formality. Correlations among the dimensions over the role medians yielded a slightly different two-dimensional space. The "role space" was characterized by an affect dimension, which consisted of high affect and intimacy on one end versus low affact, formality,

and hostility on the other end, and a second, orthogonal dimension of lowhigh versus high-low status roles.

On the basis of these derived spaces, a two-step mathematical model was postulated for predicting the probability of occurrence of a particular behavior given a particular role. An empirical test of the model, using independent estimates of the likelihood of occurrence of behaviors given particular roles as a criterion, resulted in 29 out of 50 possible correlations which were significant and in the right 6 rection. These results appear to support the model.

SUBPROJECT II

This Subproject was originally under the direction of L. M. Stolurow. Since Dr. Stolurow's leave from Illinois in September 1966, the Subproject has been administratively absorbed by Subprojects I and III. The major direction of the Subproject has been Triandis' responsibility since we wanted to facilitate efforts to incorporate the findings of cultural differences of various measures (i.e., semantic differentials, role differentials, behavioral differentials, and antecedent-consequent meanings) into Cultural Assimilator programs.

A total of five Culture Assimilators have now been developed. Three of these were constructed under the ARPA contract. These are the Arab I and the revised Arab II Culture Assimilators; the Iran Assimilator, and the Indian Assimilator. The Thai and Honduras Culture Assimilators, which are also now available, were developed under contract with the Office of the Surgeon General. An experimental version of a Greek Culture Assimilator is now being constructed for a study comparing the efficacy of Culture Assimilator training with training by means of an essay which presents the same

material in the same span of time. This study is described in the previous section.

We are currently working on a Technical Report describing the Culture
Assimilator and briefly summarizing the findings of studies in which this
method of culture taining was utilized.

SUBPROJECT III

The primary mission of this Subproject is the field testing of Culture Assimilators and the development of concepts and methods for determining the conditions under which groups operating in conjunction with members from another culture, or containing individuals from another culture, will perform effectively.

The work supported by this contract and by the preceding contracts, under the Office of Naval Research, has led to a theory of leadership for interacting groups which has given highly consistent predictions of group performance. Specifically, the findings have shown that the effectiveness of a group or an organization depends upon both the leader's style of directing his group and the favorablaness of the group-task situation for the leader. Task-oriented leaders perform more effectively in favorable and relatively unfavorable situations while relationship-oriented leaders perform more effectively in situations of intermediate favorableness. This theory (the so-called Contingency Model) as well as cross-validation studies and supporting data has been published in Fiedler's most recent book: A Theory of Leadership Effectiveness, McGraw-Hill, 1967. This integration of our work also contains summaries of our findings on coacting and counteracting groups. The work has already aroused interest in the military services,

and Dr. Fiedler has been invited to lecture at the U.S. Naval Academy as well as the U.S. Military Academy, West Point.

The work under this project has been particularly concerned with the extension of the Model to heterocultural groups (e.g., a study in cooperation with the Belgian Naval Forces in 1964-1965, a study at the European School in Brussels, a study in Tran during the past year, two field studies in Honduras under SGO sponsorship, and five laboratory experiments). Current research seeks to explicate the effect of task structure on leadership and group performance, and on field testing the Culture Assimilator training in a variety of leadership and task conditions abroad.

Iran Field Study. Martin Chemers has now returned from Tehran after gathering data on Culture Assimilator training in 57 groups. The brackdown on the sample of Americans involved in this experiment is as follows:

- (a) Eighteen Americans living in Tehran volunteered to take part in the research project. This sample consisted of ten males and eight females.
- (b) Twelve college students visiting Tehran on an eight-week tour sponsored by a Christian Ecumenical Youth Movement also took part in the experiment. This sample consisted of seven males and five females.
- (c) Thirteen executives and wives of the Lavan Petroleum Company
 of Iran, a division of Atlantic Richfield Oil Company, made
 up the third sample. Eight males and five females were included
 in this sample.

(d) Fourteen new school teachers at the Community School of Tehran. Five males and mine females were included. The Community School is sponsored by the American Presbyt rian Mission in Iran.

The total ample included 30 m les and 27 females (all volunteers).

Each group was composed of one American, who had received training on either the Iranian Cultura Assimilator or the Iranian Geography Assimilator, and two Iranians. The groups worked on two discussion tasks. One of these tasks required the group to plan and write out a campaign for spreading modern technological information in the provinces. In this task, the American member served as the group leader, and the two Iranian members were his expert advisers on the culture and customs of Iran.

The other task required the group to reach an agreement on the proper solution to three family problems, i.e., care of elders, nepotism, and discipline of children. Before discussion, each group member was asked to rate his own culture's position on each problem, and then to try and bring the group decision as near as possible to the position of the subject's own culture. These instructions were designed to set up a negotiation situation.

Measurez were made of interpersonal relations, group atmosphere, leader's social attitudes, and group productivity. The data are presently being analyzed.

Cooperation Effects

A series of studies aims to establish the effects of different task organizations on group interaction and performance. O'Brien and Ilgen are analyzing the results of a study which manipulated the cooperation requirements of the tesk. Four different kinds of cooperation were defined in accordance with a previous analysis carried out by O'Brien (1967).

The following kinds of cooperation may occur (Table 1):

| Consended | Organization | | | | |
|---------------|--------------|---|----------|----|--|
| Cooperation | 1 | 2 | <u> </u> | !4 | |
| Coordination | 0 | + | 0 | + | |
| Collaboration | 0 | 0 | + | + | |

Table 1

Cooperation is defined as the extent to which integrated action is required between group members for the group goal to be achieved. Two forms of cooperation were defined: one form, collaboration, involves members working together upon the same task in a face-to-face situation. The other form, coordination, occurs when there is sequencing of tasks so that sub-tasks are performed separately and in a fixed time order.

In organization 1, each position has one sub-task and is required to perform this task without collaborating or receiving help from other positions. (This is Fiedler's coacting group.) In organization 2, each position has one sub-task to begin with, but passes the job along to the next position after a certain period. This is modeled after an assembly-line organization. The third organization involves all persons working together on the same sub-tasks, while the final organization is a combination of collaboration and coordination (interacting group).

In a laboratory study we found (O'Brien and Ilgen, 1967) that the type of organization significantly affects productivity of three-man groups performing a creative task. (Table 2).

| | Organization | | | |
|---|--------------|------|-------|------|
| | 1 | 1 2 | 3 | 4 |
| hean Froductivity (Standard scores) | 1.55 | 5.36 | -8.79 | 2.05 |

Table 2.

At least for these particular tasks, the most productive work organization employs coordination and the least productive employs collaboration.

(F = 10.10, p < 005, 34% of variance accounted for.) The direct effects of leader characteristics (LPC) and personal compatibility of members (Schutz's FIRO scales) were not significant. However, we did find a significant effect between LPC and compatibility on some productivity measures (Figure 1).

High LPC leaders had more effective groups if group members were compatible but the reverse result was the case for low LPC leaders. Further analysis on this study is continuing and an additional experiment is planned using a structured task.

Another experiment using the cooperation : dices has been analyzed.

O'Brien and Biglan found that the form of group interaction in four-man military groups with differently ranked leaders was significantly related to the cooperation requirements of the task. Interpersonal, structuring, and

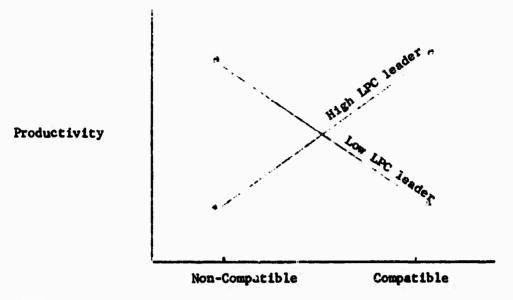


Figure 1.

task activities (Bale's system) increased as the cooperation requirements of the task increased. Task effects were more pronounced than effects due to differences in military rank. The report, together with an article on the cooperation indicer, has been submitted for publication.

PROFESSIONAL PERSONNEL

(Contract Nonr 1834 (36)

1967-68

Personnel Supported by Contract

| Research Assistant | 50% |
|---------------------|---|
| Research Assistant | 50% |
| Research Assistant | 50% |
| Research Associate | 67% |
| Research Assistant | 50% |
| Research Assistant | 50% |
| Assistant Professor | 67% |
| Research Assistant | 50% |
| Research Assistant | 50% |
| | Research Assistant Research Assistant Research Assistant Research Assistant Research Assistant Assistant Professor Research Assistant |

Nonselaried Personnel Working on ARPA ONR Project or Related Research

| Chemers, Martin | Research Associate |
|-----------------|---------------------|
| Fiedler, Fred | Professor |
| Osgood, Charles | Professor |
| Nealey, Stanley | Assistant Professor |
| Triandis, Harry | Professor |

Poreign Consultants

| Archer, W. K. | Tehran |
|------------------------|----------|
| Vassiliou, V. | Greece |
| (M. Nassiakou) | |
| Lekhyananda, Duangduen | Thailand |

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